



The Élan™ SC400 Microcontroller for Mobile Computing

The Élan™ SC400 Microcontroller

The ÉlanSC400 microcontroller for mobile computing applications is the latest in a series of E86™ family microcontrollers that utilizes the AMD Systems in Silicon™ design philosophy—combining the industry proven Am486® CPU core with a comprehensive set of peripherals in an advanced 0.35 micron process. The core feature set of the ÉlanSC400 microcontroller combines the Am486 CPU with an integrated memory controller, PC/AT system logic, and essential mobile computing peripherals. The mobile computing peripheral set consists of multiple PLLs, PMU, a dual PC card slot controller, LCD graphics controller, an IrDA infrared port, and power management features.

Mobile products demand both ultra-low power and ultra-small form-factor packaging, whether the application is medical, point-of-sale, data collection, miniature notebook PC's, or smart phones. The ÉlanSC400 microcontroller is the only single-chip, PC/AT-compatible microcontroller that addresses the design concerns of mobile applications. This device combines system peripheral integration and key mobile computing peripherals (including an integrated power management unit) to provide designers with one solution—all on an ultra-small, 292-ball grid array (BGA) package.

PRODUCT HIGHLIGHTS

Optimized for Mobile Systems

- Ultra-low power with on-board power management
- Ultra-small form-factor package design, 292-ball grid array (BGA)

Enhanced Am486 CPU Core

- Robust and industry proven
- 8 Kbyte cache
- 33-, 66-, and 100-MHz versions (under power management control)
- Fully static design for long battery life
- Just-add-memory™ for a complete system

Integrated Peripherals for Mobile Applications

- Dual PC card controller PCMCIA 2.1 and ExCA compliant
- LCD graphics controller supporting Windows®95, Windows 3.1, GEOS, and RTOS GUI
- 16C550-compatible UART
- EPP-compatible parallel port
- 146818A-compatible RTC
- Matrix scan keyboard controller
- IrDA infrared port

Integrated PC/AT Compatibility

- Complete memory controller supports 64-Mbyte EDO and FPM DRAM
- Complete ROM controller supports ROM and Flash
- PC/AT-compatible versions of 8254, 2x8259A, and 2x8237A
- 16 bit ISA bus controller
- CPU local bus access (VL-type)

Integrated Power Management

- Flexible operating speeds up to 100 MHz and down to 0 MHz (suspend)
- Multiple operating modes: hyper-speed, high speed, low speed, standby, suspend, and off
- Full control of system and internal peripheral clocks
- Supports self refresh and slow refresh DRAMs
- PLL technology for clock generation
- Activity detection and automatic power management
- APM 1.2 compliant



ÉlanSC400 Microcontroller Benefits: ÉlanSC400 Microcontroller Features:

Ultra-small form factor
Ultra-low power

- It doesn't get any smaller than one chip
- Unparalleled integration reduces chip count
- Low voltage
- Integrated Power Management Unit (PMU), allows fine tuning of power for maximum battery life
- Multistage Phase Lock Loops (PLL) generate all chip clocks from a 32 KHz watch crystal, enabling microamps of suspend current

DOS and Windows compatibility

- Integrated PC/AT compatibility
- BIOS and PC card support provided by Phoenix Technologies and SystemSoft

High-speed wireless communications

- Integrated Infrared (IrDA) port supports both 1.15 Kbps and high-speed 1.15 Mbps (10x speed)

Lower system cost

- Unified memory architecture eliminates separate graphics memory
- Single chip integration reduces system logic
- AMD E86 family provides price/performance that makes sense for embedded

Accelerated time-to-market

- E86 CPU leverages the momentum of the successful x86 architecture
- FusionE86 program for software tools
- Single chip design, Just-add-memory
- PC/AT compatibility reduces software development

Longer life of supply

- AMD E86 family product life cycles match the needs of the embedded industry

The AMD FusionE86SM program provides ÉlanSC400 microcontroller and all E86 family customers with products to shorten time-to-market and ease design, supplying development tools for the entire design cycle. AMD's implementation of the FusionE86 program provides assistance to key third party developers of RTOS, drivers, development tools and chips—ensuring that our embedded x86 customers will have access to critical development tools.

As a member of AMD's E86 family, the ÉlanSC400 microcontroller benefits from x86 momentum, yielding CPUs that preserve software investment and provide for significant time-to-market advantages due to the established x86 tool chain. AMD's E86 family of robust x86 embedded devices allows designers to leverage x86 success by providing a longer life of supply at price/performance points that make sense for embedded products.

The ÉlanSC400 microcontroller is available in 33-, 66-, and 100-MHz speeds in a 292-ball grid array (BGA) package. For additional information on the ÉlanSC400 microcontroller or any E86 family device, contact your local AMD sales office or AMD sales representative.



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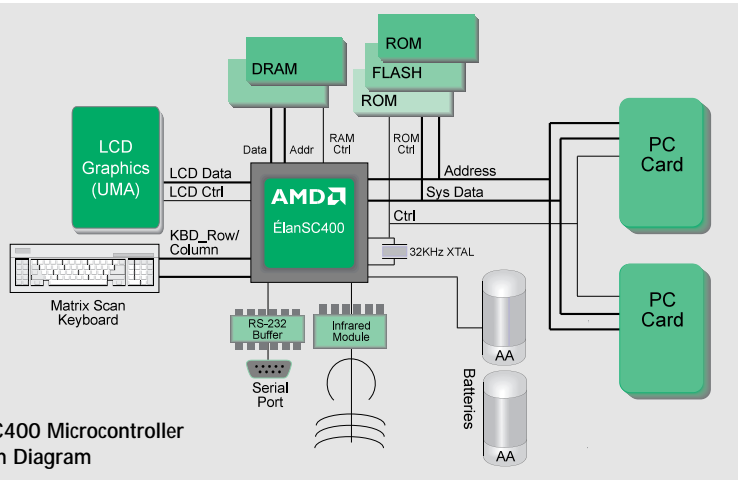
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ÉlanSC400 Microcontroller
System Diagram

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